oroughly cleaned out; flatus for the first time began to pass; the patient became free from pain and slept for six hours. The temperature went down to 99.6°. From this time she retained food, and showed nothing unusual in the progress of the case. On the seventh day the stitches were all removed (the tube having been removed on the fifth day) showing the walls had united by first intention. A well-fitting truss, made from the cast of the abdomen, was adjusted four weeks later, which allowed the patient to go about the room with comfort. Examined three months later, she was much improved in health, the fistulous opening into the vagina had closed, and the operation had proven entirely satisfactory. I submitted the tumor for examination to Dr. Adolf Alt, who said it was of the papillomatous form.

Hernial pouch, showing shallow secondary pouches in peritoneum.

Coblentz believes that when ovarian tumors show a papillomatous development they invariably arise at the hilum of the ovary; this form is the most common affecting these organs, and like villous growths elsewhere is not always malignant. In the malignant form papillary growths will be found in patches upon adjacent structures, or else the womb and broad ligaments are also involved in one cauliflower-like tumor. Tait observes that he has had two cases of ovariectomy in which he left large masses of papilloma attached to the womb, yet in each case these masses wholly disappeared and the patients are both in perfect health. If this is true, may we not hope that this specimen is a benign tumor?

This tumor was roughly handled five months be-

fore the operation, causing the fistulous opening. May we not conclude, if it is true, as Tait and Bantock claim, that tapping hastens degeneration, and after an accidental rupture of such a cyst the peritoneum will be found studded with patches of papillary cancer (hence they argue that ovarian tumors should never be tapped and that they should be removed in their earliest stages before any malignant transformations have taken place), that had this tumor been removed entire at the time it was injured, there would be no question that it would not return?

Grand and Washington Aves.

SIMULTANEOUS TRIPLE AMPUTATION FOR RAILWAY INJURY, WITH REMARKS ON THE TECHNIQUE OF MULTIPLE AMPUTATION.

Remarks before the College of Physicians of Philadelphia, March 7, 1888.

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This patient is brought before the College largely on account of the rareness of simultaneous triple major amputations. It is quite possible that some of the Fellows may not have had an opportunity of seeing such a case.

The patient is a Moor, 20 years of age. He was admitted to the University Hospital November 28, 1887, having been run over on the Pennsylvania Railroad. I saw him within two hours after his admission. I found a compound comminuted fracture of the right leg, the laceration extending above the knee; complete avulsion of the left leg, the limb having been torn off in its lower third; and a compound fracture of a severe character of the right hand and wrist. There was also a compound fracture of the skull, involving the frontal bone. This, however, was an impacted fracture, of course without much depression, and did not require interference. In addition to these injuries there were numerous brush-burns and contusions, some of a grave character. One upon the left buttock was so severe that the separation of the slough left a cavity fully two inches in depth. Notwithstanding these serious injuries, the patient's general condition was very good; he had reacted thoroughly, and his axillary temperature was 99° F. Under these circumstances I felt justified in proceeding to the immediate removal of the injured limbs, and amputated successively the right thigh by the antero-posterior flap method; the left leg, about its middle, by a modified Sédillot's external flap operation, the modification consisting in making both flaps from without inward, instead of cutting the external flap by transfixion; and the right forearm by an oval incision, making use of the uninjured skin of the back of the hand and wrist. Certain variations from the ordinary procedure in amputations I shall refer to when I come to speak of what I have ventured to term the technique of multiple amputations. After the operations were completed, the temperature had fallen only to 98° F. The patient had no bad symptom and rapidly recovered, and as you

see him now all his wounds are perfectly healed, and he is entirely well.

I have collected some statistics of synchronous multiple amputations. I am able to find but one instance of *quadruple* synchronous amputation—a case in which the operations were done for frost-bite by Dr. George E. Jackson, of Dakota. There are several cases recorded of multiple amputations, not synchronous, the one which approaches nearest to a synchronous operation being that of Champenois, a French surgeon, who amputated three limbs on one day and the fourth a few days later.

Of synchronous triple amputation there have been reported four successful cases, not including that presented to-night: one by Dr. Köhler, of Schuylkill Haven, Pa.; one by Dr. Lowman, of Johnstown, Pa.; and two referred to by Professor Agnew, in his *Surgery*, one occurring in the practice of Dr. Stone, of New Orleans, and the other in York, the name of the surgeon not being given. There are reported four or five triple amputations not synchronous. I have myself resorted to synchronous triple amputation in two cases. Several years ago I had occasion to perform this operation, removing both legs and the right forearm of a man *æt.* 45 years, of intemperate habits. The patient died on the tenth day, the fatal result being due rather to the visceral lesions resulting from alcoholism than to the operation.

Double amputations are comparatively numerous. I have personally performed fifteen such operations, this number not including two successful cases of double partial amputation of the feet. I have done fifteen double major amputations, of which five have ended in recovery. One of the patients who recovered I had the honor of exhibiting to the College some years ago; the amputations in his case were through the right hip-joint and through the left leg. In the fatal cases, seven of the deaths occurred in less than one day, the immediate result of the shock of the injury and of the operation. Three patients died, one in three days, one in four days, and the third in eighteen days. The latter would probably have recovered but that he also had suppurative disease of the middle ear, which appeared to be the cause of the pyæmia which proved fatal; for when the stumps were examined, after death, they were found to be in good condition.

With regard to what I have termed the technique of multiple amputations, there are some points which my experience justifies me in urging upon surgeons as of importance in promoting success: In the first place, it is very important that the time occupied by the operations should be brief; that the operations should be done systematically, so as to keep the patient under the anæsthetic as short a time as possible. The next point, perhaps of even more importance, is to keep up the temperature of the patient during the operations. I have been led to think that this is, perhaps, of more importance than anything else. Of course, loss of blood must be scrupulously guarded against, and loss of blood directly causes loss of temperature. In this case, hot cans were kept around the patient during the entire operation, and in order to save time I operated systematically, the

tourniquet and Esmarch bandage being both employed to prevent any loss of blood. I began with the most serious injury, and this is, I think, a point of importance. It may happen that, after the removal of one limb, it will be found that further operation must be postponed on account of the patient's condition, and then it is, of course, better to leave him with the less severe injuries. In this case I began with the thigh. After amputating the limb, I secured the main vessels, which were readily found. I attempted to tie the arteries with catgut, but as the ligatures broke, I substituted silk and, in order to save time, left both ends uncut. I next amputated the right leg, securing the vessels in the same manner, and then passed to the forearm. I then came back to the right thigh, screwed up the tourniquet and removed the Esmarch bandage, and secured all the vessels that required ligature, then passing to the other limbs in the same order as before. After the vessels had been secured in each case, a towel dipped in a hot antiseptic solution was placed between the flaps. The wounds were then dressed in the same order, and in this way the operation was completed in a comparatively short time.

The points which I have mentioned I believe to be of great importance, and I think that much of the disappointment of surgeons from these operations is due to a want of attention to these matters.

I should also say that, in order to preserve the bodily heat, I did not use irrigation during the amputations. I think that this often seriously reduces the temperature, and even in comparatively slight operations where it has been used, I have seen the temperature fall to 97° F., and even 95° F. I think that in any grave case, it is better to omit it and to rely upon washing with hot antiseptic solutions before and after the operation. Also, the packing of wet towels around the seat of operation, as is very commonly done, tends to depress the temperature, and in grave cases should be omitted.

I think that it is to an observance of these precautions that I have owed success in this case, and in many other serious operations of various character.

MEDICAL PROGRESS.

PHYSICS OF THE MALE URETHRA.—MR. W. W. WAGSTAFFE says: I have been struck, during the passage of catheters and bougies in the out-patient room, with the fact that a natural twist is given to the instrument during its removal from the bladder and urethra of the male, a rotation very sensible to the feel, especially when light and flexible instruments are used. In order, therefore, to test the accuracy of one's impression I have adopted, after various trials, the simple one of using a bougie à boule of medium size (about No. 10 of English measurement). This is passed thoroughly into the bladder, and then withdrawn until a check is felt by the neck of the bladder. From this point the observation starts, and the distances are taken from this start point.